



## HONORS AND AWARDS

# Drs. Leo C. van Rijn, Edward B. Thornton, and Nicholas C. Kraus Honored at the Coastal Sediments '07 Conference

### Overview

The Sixth International Symposium on Engineering and Science of Coastal Sediment Processes, *Coastal Sediments '07*, was held in New Orleans, Louisiana, May 13–17, 2007. Nearly 200 papers were presented in four concurrent sessions over 3 days, with approximately 350 attendees from 25 countries. *Coastal Sediments '07* celebrated the 30-year anniversary of the conference series. The theme of *Coastal Sediments '07* was “Coastal Engineering and Science in Cascading Spatial and Temporal Scales.” This theme was chosen to stimulate research at temporal and spatial scales at which coastal engineers and scientists must work in developing knowledge and capabilities to assist society in managing the coast. This forward-looking theme was successfully reflected in all the presentations and discussions.

Three prestigious awards were presented at the traditional Awards Luncheon held on the last day of the conference. These awards are discussed below in honor of each of the recipients.

### Professor Leo C. van Rijn—2007 Coastal Award Recipient

Professor Leo van Rijn received the 2007 Coastal Award. The Coastal Award is presented at the Coastal Dynamics and the Coastal Sediments conferences to individuals who have made a widely recognized contribution to coastal science and engineering spanning several decades. Both the breadth and the level of the contribution to the field are considered. The award was presented by S. Jeffress Williams of the United States Geological Survey (USGS).

During the award ceremony, Williams emphasized that van Rijn was only the fourth person to receive the honor after Professor Per Bruun, Professor Jørgen Fredsøe, and Professor Paul Komar. Van Rijn's considerable contributions to improve coastal engineering practice were noted, which included pioneering research in sediment transport processes and the development of the first generation of engineering morphodynamic area models. Throughout his career, the drive to provide solutions using and extending state-of-the-art knowledge and tools has resulted in numerous papers and books that are highly appreciated and widely used. A series of four recently published papers in the *Journal of Hydraulic Engineering*, which comprise sediment transport formulations with an unprecedented validity range dealing with coarse sand down to fine silt under combined waves and currents, are an example of his ability to combine scientific challenges

with practical solutions. His effort in establishing joint European research programs has been highly successful and has resulted in various large research projects (e.g., Sedmoc, Sandpit, and Coast3D) with valuable scientific output. He has also developed several instruments for measuring *in situ* velocity and sediment transport in rivers and estuaries.

Van Rijn is transport and morphology specialist at WL | Delft Hydraulics and professor at Utrecht University. He is actively involved in the further development of process-based models and is presently working on detailed modeling of dune erosion processes with the aim to derive a new parameterized dune erosion rule.

His philosophy in coastal engineering is and always has been this: to learn and from time to time apply what one has learned. Isn't that a pleasure!

Dirk-Jan R. Walstra  
WL | Delft Hydraulics and  
Delft University of Technology  
The Netherlands

### Professor Edward B. Thornton—2007 International Coastal Engineering Award Recipient

Dr. Billy Edge presented the 2007 International Coastal Engineering Award to Dr. Edward B. Thornton, Distinguished Professor at the Naval Postgraduate School in Monterey, California. This award was given on behalf of the Coastal Engineering Research Council of the Coasts, Oceans, Ports, and Rivers Institute (COPRI) of the American Society of Civil Engineers (ASCE) and was established in 1978 to honor landmark achievements through research, design, and advancement in coastal engineering and science.

Thornton has been an active researcher in the field of nearshore oceanography for 40 years. His contributions have been many, and his name has been associated with wave transformation and dissipation modeling, longshore currents (and their instabilities), rip currents, and the conduct of large field experiments.

Thornton's contributions began in the late sixties, when he was one of several independent researchers involved in understanding the dynamics of longshore currents. The dynamics of these currents remained an interest of his, leading to further work on their improved modeling through the incorporation of a random wave field and on low-frequency fluctuations in the currents, as well as on other aspects of their dynamics.

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Professor Leo Van Rijn (Left) Accepting the 2007 Coastal Award from CS '07 Steering Committee Member Jeff Williams

Another theme of Thornton's research, linked to the longshore current work, has been wave dissipation at the shore and, specifically, the development of an accurate and robust model of wave height decay of narrow-banded waves, the "Thornton & Guza" model (see THORNTON and GUZA, 1983). This is one of the most cited papers in nearshore physical oceanography (191 citations at the time of writing), and it is still used throughout the modeling community despite being over 20 years old. This work led directly to the development of the analytical longshore current profile model alluded to above, and a refinement of the approach, also codeveloped by Thornton, is one of the alternative methods for the prediction of wave height decay.

Thornton's later work has increasingly focused on rip currents and beach change. His location at the Naval Postgraduate School has proved particularly fortuitous, as Monterey Bay forms an ideal place to study rip currents and the cuspatate shore that frequently accompanies them. Contributions on these topics with coworkers have followed, in particular the identification of the wave field as one of the forcing parameters that can affect the spacing of bed-forms. Other topics studied at various stages in his career include low-frequency waves, the energetics of wave breaking, and small-scale beach morphology.

Perhaps one of Thornton's most lasting legacies, however, is his close involvement in and nurturing of the field experiments, initially in southern California, most famously at Duck, North Carolina, and later at Monterey Bay, from which

so much has been learned since the 1980s. Results from these experiments still form massively useful datasets for modelers throughout the world. This has also meant that he has worked with and/or mentored many of the leading scientists in the field today, particularly in the United States. It also has meant that he has metaphorically "written the book" on field experiments. It is to be hoped that one day he will undertake this task literally.

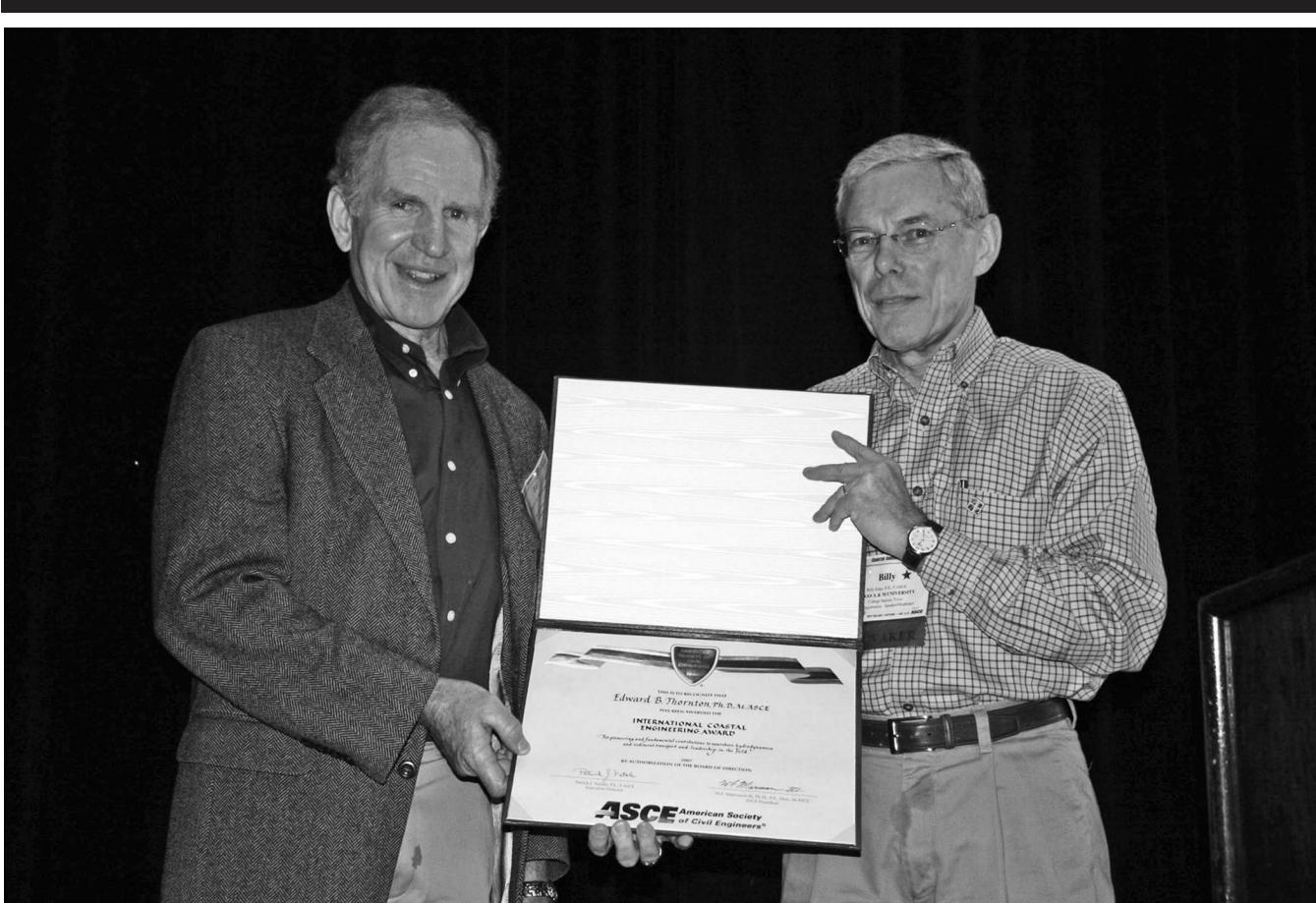
Nick Dodd  
University of Nottingham, U.K.

#### **Dr. Nicholas C. Kraus—ADV Award Recipient**

Dr. Nicholas C. Kraus was honored at *Coastal Sediments '07* with the first prototype Acoustic Doppler Velocimeter (ADV). Dr. Kraus was presented this award for his vision, which led to the development of the ADV in 1992. Acoustic Doppler Velocimeter technology has largely revolutionized the measurements of nearshore currents.

In their presentation of the award, Dr. Ramon Cabrera and Dr. Atle Lohrmann reminisced,

When we look back at our professional lives, we can usually identify occasions that defined what we became and where we went. A few individuals have the gift of being the source of these events. They direct, suggest, shape, and form without force or coercion. They have no ulterior motive, and they influence others for the sole purpose of



Dr. Billy Edge (Right) of COPRI Presents the 2007 International Coastal Engineering Award to Dr. Ed Thornton

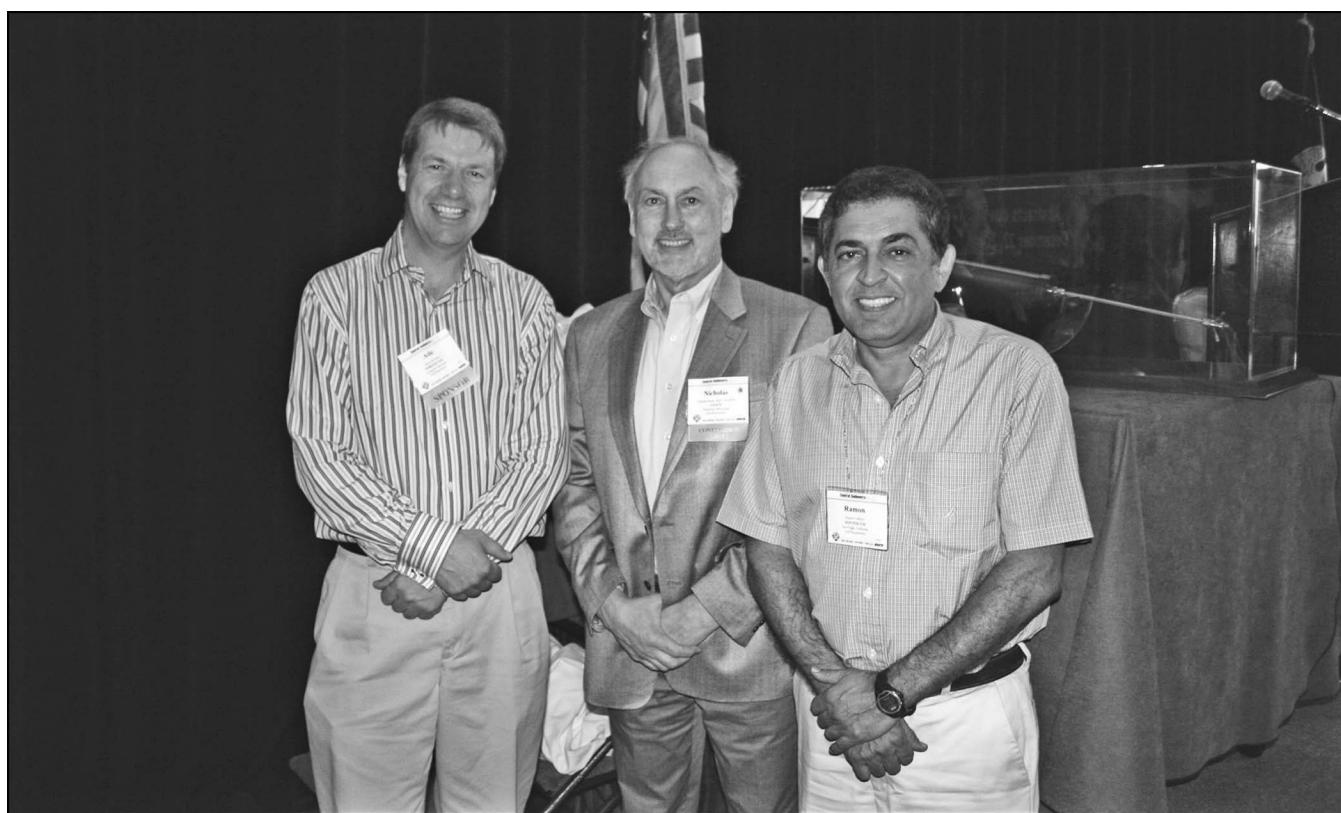
the betterment of us all. In our case, the events that started our lives as independent instrument developers and company builders started in the backyard of a hillside house in Vicksburg, Mississippi. Less than 1 year later we were able to come back to Vicksburg and test the first Acoustic Doppler Velocimeter, now known as the ADV. This instrument is today being used in hydraulics laboratories all over the world, with more than 1500 units produced and sold. This backyard discussion essentially put in place a new dynamics in water velocity measurements.

With the same leadership vision, Dr. Kraus initiated, planned, and was intensively involved in several landmark field and laboratory research campaigns. The DUCK85 and SUPERDUCK89 field experiments on surf zone sand transport resulted in a significant improvement of the capability of predicting longshore sediment transport rate and its cross-shore distribution. The field data and findings are crucial to advancing the ability to model shoreline change. In 1991, Dr. Kraus led the multi-institutional SUPERTANK laboratory experiment on cross-shore sediment transport. The comprehensive SUPERTANK dataset on total-channel hydrodynam-

ics and sediment transport ranges from detailed swash-zone processes to larger-scale morphological changes of the entire beach profile. The findings from the SUPERTANK experiments contributed to the numerical modeling of cross-shore transport processes and storm-induced beach changes.

Dr. Kraus's contribution to coastal sediment research certainly did not stop at equipment development and field-laboratory experiments. He is the mastermind of the two most commonly used numerical models on nearshore morphological evolution: the GENESIS model that calculates long-term shoreline change, including engineering activities such as beach nourishment and structures; and the storm-induced beach change (SBEACH) model, which calculates short-term response of beaches during storms, including processes such as wave-induced erosion and dune overwash.

Recently, Dr. Kraus took on an even more challenging research topic: coastal inlet processes and morphology change. Linking back bay and the ocean and interacting dynamically with adjacent shorelines, coastal inlets are probably the most complex coastal system. As the leader of the Coastal Inlets Research Program (CIRP), Dr. Kraus assembled a team of numerical hydrodynamic modelers, computer scientists, prac-



Left to Right: Dr. Atle Lohrmann of Nortek, Dr. Nicholas C. Kraus, and Dr. Ramon Cabrera of SonTek Standing in Front of the First Prototype ADV Presented to Dr. Kraus

tical coastal engineers, and coastal geologists. The result is the Coastal Modeling System, incorporating state-of-the-art knowledge on hydrodynamics, sediment transport, and morphological evolution.

Dr. Kraus's contribution to the coastal research community of the world goes beyond his scientific papers and numerical models. He serves as one of the key organizers of the suc-

cessful Coastal Sediments Conference Series, among numerous other services to the research community.

Ping Wang  
University of South Florida  
Julie D. Rosati  
Coastal and Hydraulics Laboratory